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On the Turkish and Caucasian species of *Eurysunius*, subgenus of *Astenus* DEJEAN, with an appendix on *A. breuili* JARRIGE (Coleoptera: Staphylinidae, Paederinae)

V. ASSING

A b s t r a c t : *Astenus (Eurysunius) bicoloratus* sp. n., *A.* (*E.*) *paphlagonicus* sp. n., and *A.* (*E.*) *sexsetosus* sp. n. from Anatolia are described, figured, and distinguished from the Caucasian *A.* (*E.*) *paradoxus* (EPPELSHEIM). Their distributions are mapped and a diagnostic key is provided. The previously unknown male sexual characters of *A.* (*E.*) *breuili* JARRIGE are illustrated.

K e y w o r d s : Coleoptera, Staphylinidae, Paederinae, *Astenus, Eurysunius,* Palaearctic region, Turkey, Caucasus region, Spain, taxonomy, new species, endemism, myrmecophily.

Introduction

The subgenus *Eurysunius* REITTER 1909 is represented in the Western Palaearctic region by approximately 40 species, the vast majority occurring in the western Mediterranean region from Italy to the Iberian Peninsula and northwestern Africa. So far no *Eurysunius* have become known from Turkey. All the species of the subgenus are brachypterous, more or less endemic, and rare to extremely rare; many of them are represented only by their respective holotypes (COIFFAIT 1984). Since a considerable number of original descriptions are based exclusively on females, it seems very likely that some of the currently valid names will eventually be identified as synonyms. Some, if not all the species appear to be associated with ants. According to personal observations, this is at least true of *Astenus myrmecophilus* (WOLLASTON), which was repeatedly and in larger numbers found in nests of *Tetramorium* sp. in Gran Canaria.

Among unidentified staphylinid material from the collections of the Naturhistorisches Museum Wien and the Muséum d'Histoire Naturelle Genève, four specimens of *Eurysunius* from northern and central Anatolia were found, which proved to belong to three undescribed species and which are described here. I use this opportunity to illustrate the previously unknown male sexual characters of *Astenus* (*E.*) *breuili* JARRIGE, based on a recently collected male from the type locality of *A. baeticus* COIFFAIT, a junior synonym of *A. breuili*.

Material

The material examined is deposited in the following collections:

MHNG ..... Muséum d'Histoire Naturelle, Genève (G. Cuccodoro)

NHMW ..... Naturhistorisches Museum Wien (H. Schillhammer)

cAss ..... author's private collection

cSch ..... private collection Michael Schülke, Berlin

Astenus (*Eurysunius*) *bicoloratus* sp. n. (Figs. 1-3, Map 1)

Holotype ♂: Akkus, Anat.bor., 3.-5.6.61, leg. F. Schubert / Holotypus ♂ *Astenus bicoloratus* sp. n. det. V. Assing 2001 (NHMW).

Description: 3.7 mm (from anterior margin of labrum to apex of abdomen). Head and pronotum dark brown, anterior 2/3 of elytra blackish, posterior 1/3 of elytra yellow (Fig. 1), abdomen blackish with the posterior margins of the anterior tergites and the apex lighter, legs and antennae light brown to ferrugineous.

Head transverse, 1.3 times as wide as long (length measured along midline from anterior margin of clypeus); dorsal surface distinctly convex, with very dense, large, but rather shallow punctures, and only with subdued shine; pubescence short, testaceous, and depressed; eyes relatively small and weakly prominent, temples approximately 1.5 times as long as eyes in dorsal view (Fig. 1). Antennae relatively stout, antennomeres V - X approximately as wide as long (Fig. 1).

Pronotum across anterior angles approximately as wide as head, 1.16 times as wide as long (width measured across anterior angles); posterior margin convex; lateral margins distinctly sinuate, lateral parts in the middle broadly, but not very deeply impressed; anterior angles each with long seta of about half the length of lateral margin of pronotum (Fig. 1); microsculpture barely noticeable, almost absent; puncturation distinct and well-defined, interstices somewhat wider than punctures and shining; pubescence short, greyish, depressed.

Elytra 1.1 times as wide and at suture 0.6 times as long as pronotum; microsculpture absent; puncturation very distinct and granulose; interstices as wide as punctures or slightly wider; pubescence yellowish, more distinct than that of head and pronotum; long setae present only at posterior margin near posterior angles, absent from lateral margins. Hind wings reduced.

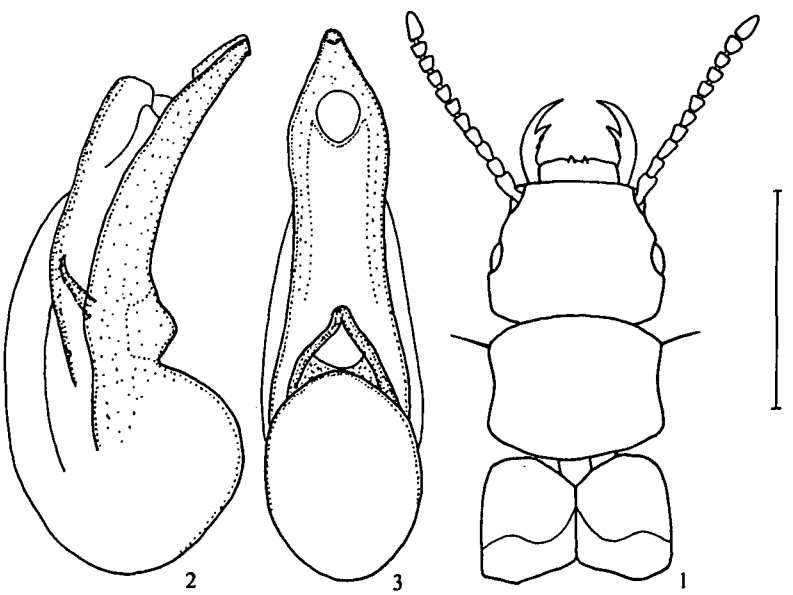
Abdomen slightly narrower than elytra, widest at segments V - VI; puncturation anteriorly very dense and serrate, density decreasing posteriad; tergite VII with sparser puncturation, interstices on average twice as wide as punctures and without microsculpture; posterior margin of tergite VII without palisade fringe.

♂: sternite VII unmodified, its posterior margin weakly concave; posterior margin of sternite VIII with deep and acute incision; aedeagus as in Figs. 2-3.

Derivatio nominis: The name (Lat., adj.) refers to the distinctly bicoloured elytra.

Comparative notes: In the Caucasian *A. paradoxus* (EPPELSHEIM), the elytra are not or less distinctly bicoloured, the lighter colour of the posterior part of abdominal

tergite VII is less extensive, the eyes are larger (at least as long as temples), the puncturation of the head is less dense, antennomeres V - X are distinctly oblong (almost twice as long as wide), the pronotum is narrower than the head, the lateral margins of the pronotum are slightly converging posteriad and not distinctly sinuate, the pronotum has two long setae on either side (one at anterior angle and one at a short distance anterior to middle), the pronotal setae are longer (more than 2/3 of the length of lateral margin), the pronotal puncturation is coarser and distinctly sparser (interstices on average 1.5 - 2 times as wide as punctures), the elytra are much longer (at suture 0.73 - 0.8 times as long as pronotum) and not or only weakly impressed postero-laterally, the legs and especially the tarsi are distinctly longer and more slender, a narrow palisade fringe is present at the hind margin of abdominal tergite VII, the posterior margin of the ♂ sternite VIII is more deeply and narrowly incised, and the ventral process of the aedeagus is more slender and apically more acute (ventral and lateral view). For comparison see Figs. 10-11.



Figs. 1-3: *Astenus bicoloratus* sp. n.: **1** – outline of forebody; **2, 3** – aedeagus in lateral and in ventral view. Scale: 1: 1 mm; 2-3: 0.25 mm.

D i s t r i b u t i o n : The type was collected near Akkuş, Ordu province, Turkey (Map 1). Judging from the restricted distributions of other species of the subgenus, the species is probably endemic to northeastern Anatolia.

Astenus (*Eurysunius*) *paphlagonicus* sp. n. (Figs. 4-6, Map 1)

H o l o t y p e ♂: TURQUIE KASTAMONU, Karadere 32 km N. de Tosya, 1400m, 19.V.76, BESUCHET LÖBL / Holotypus ♂ *Astenus paphlagonicus* sp. n. det. V. Assing 2001 (MHNG).

D e s c r i p t i o n : 4.5 mm (from anterior margin of labrum to apex of abdomen, abdomen fully extended). Head, pronotum, and anterior half of elytra dark brown, poste-

rior half of elytra yellow (Fig. 4), abdomen dark brown with the posterior margins of the tergites and the apex slightly lighter, legs and antennae light brown to testaceous.

Head transverse, 1.25 times as wide as long (length measured along midline from anterior margin of clypeus); dorsal surface distinctly convex, with very dense, large, but rather shallow punctures, and only with subdued shine; pubescence short, testaceous, and depressed to weakly suberect; eyes relatively small and weakly prominent, temples approximately 1.5 times as long as eyes in dorsal view. Antennae rather short, but slender, antennomeres V - X approximately twice as long as wide (Fig. 4).

Pronotum approximately as wide as long, across anterior angles distinctly (0.85 x) narrower than head; posterior margin convex; lateral margins weakly convex, almost straight; lateral parts without impressions; anterior and posterior angles each with long seta of little more than half the length of lateral margin of pronotum (Fig. 4); puncturation very dense, on the whole similar to that of head, but punctures even larger; interstices reduced to narrow ridges, surface almost without shine; pubescence short, greyish, depressed.

Elytra 1.15 times as wide and at suture 0.6 times as long as pronotum, without distinct microsculpture; puncturation very distinct and granulose; interstices slightly narrower than punctures; pubescence similar to that of head; posterior margin of each elytron with approximately 7 long black setae. Hind wings reduced.

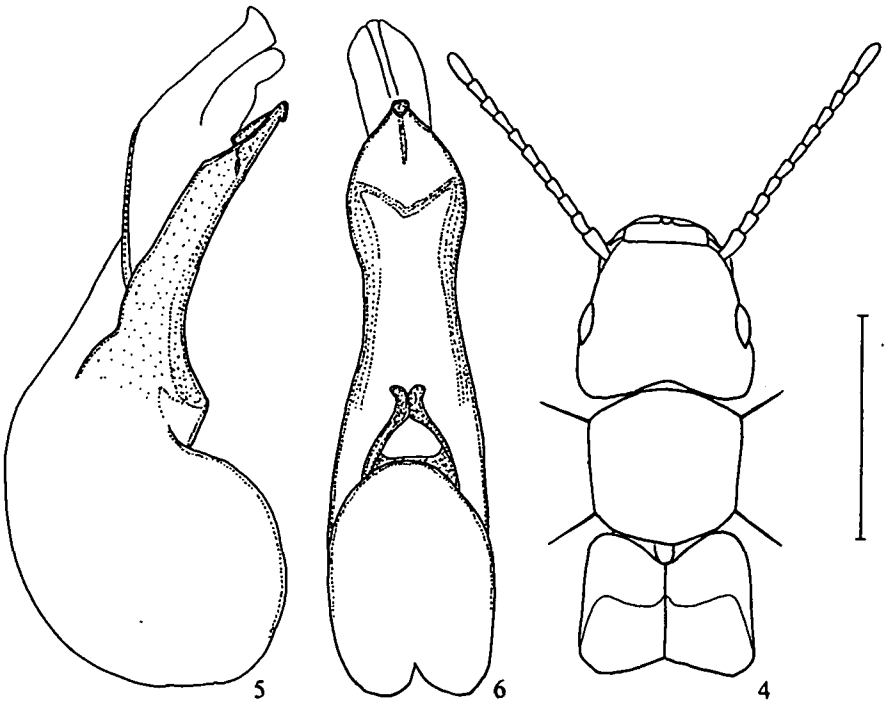
Abdomen slightly narrower than elytra, widest at segments V - VI; puncturation of tergites III - VI distinctly granulose and relatively dense; tergite VII with sparser and finer puncturation, interstices with very weak microsculpture; posterior margin of tergite VII with barely noticeable rudiments of a palisade fringe.

♂: sternite VII unmodified, its posterior margin weakly concave; posterior margin of sternite VIII with deep and acute incision; aedeagus as in Figs. 5-6.

Derivatio nominis: The name (Lat., adj.) is derived from Paphlagonia, the ancient name of the region where the type locality is situated.

Comparative notes: *A. paphlagonicus* is readily distinguished from *A. bicoloratus* sp. n. especially by the distinctly more slender antennae, the narrower and much more coarsely and densely punctate pronotum, the presence of a long seta at the posterior angles of the pronotum, by the more extensive yellow coloration of the elytra, the absence of distinct elytral impressions, and by the shape of the aedagus. In *A. paradoxus*, the elytra are not or less distinctly bicoloured, the eyes are larger (at least as long as temples), the puncturation of the head is less dense, the pronotal puncturation is more well-defined and distinctly sparser (interstices on average 1.5 - 2 times as wide as punctures), the pronotal lateral margins have additional setae a short distance behind the anterior angles, but none at the posterior angles, the pronotal setae are distinctly longer, the elytra are much longer (at suture 0.73 - 0.8 times as long as pronotum), the palisade fringe at the hind margin of abdominal tergite VII is less reduced, and the ventral process of the aedeagus is of different shape, especially in ventral view. For comparison see Figs. 10-11.

Distribution: The type locality is situated in the mountains southeast of Kastamonu, Kastamonu province, northern Anatolia (Map 1).



Figs. 4-6: *Astenus paphlagonicus* sp. n.: **4** – outline of forebody; **5, 6** – aedeagus in lateral and in ventral view. Scale: 4: 1 mm; 5-6: 0.25 mm.

Astenus (*Eurysunius*) *sexsetosus* sp. n. (Figs. 7-9, Map 1)

Holotype ♂: Turquie Kayseri, Pazarören - Bünyan, 1400m, 5.V.78, Besuchet Löbl / Holotypus ♂ *Astenus sexsetosus* sp. n. det. V. Assing 2001 (MHNG). Paratype ♀: same data as holotype (cAss).

Description: 4.3 - 4.9 mm (from anterior margin of labrum to apex of abdomen). Head, pronotum, and abdomen (except for the lighter posterior tergal margins) blackish brown, elytra yellow, with the area near scutellum, the anterior margin, and the anterior part of the lateral margin more or less infuscate. Legs and antennae light brown.

Head transverse, 1.3 times as wide as long (length measured along midline from anterior margin of clypeus); dorsal surface distinctly convex, with dense, large, but rather shallow punctures, and only with subdued shine; pubescence short, testaceous, and depressed to weakly suberect; eyes relatively small and weakly prominent, temples longer than eyes in dorsal view (Fig. 7). Antennae as in *A. paphlagonicus* (Fig. 7).

Pronotum slightly (0.93 - 0.96 x) narrower than pronotum, 1.10 - 1.14 times as wide as long; posterior margin convex; lateral margins weakly sinuate, lateral parts in the middle without or with very shallow impressions; lateral margins each with 3 long setae, all of them almost as long as lateral margins (Fig. 7); microsculpture barely noticeable, almost absent; puncturation distinct and well-defined, interstices in central dorsal area approxi-

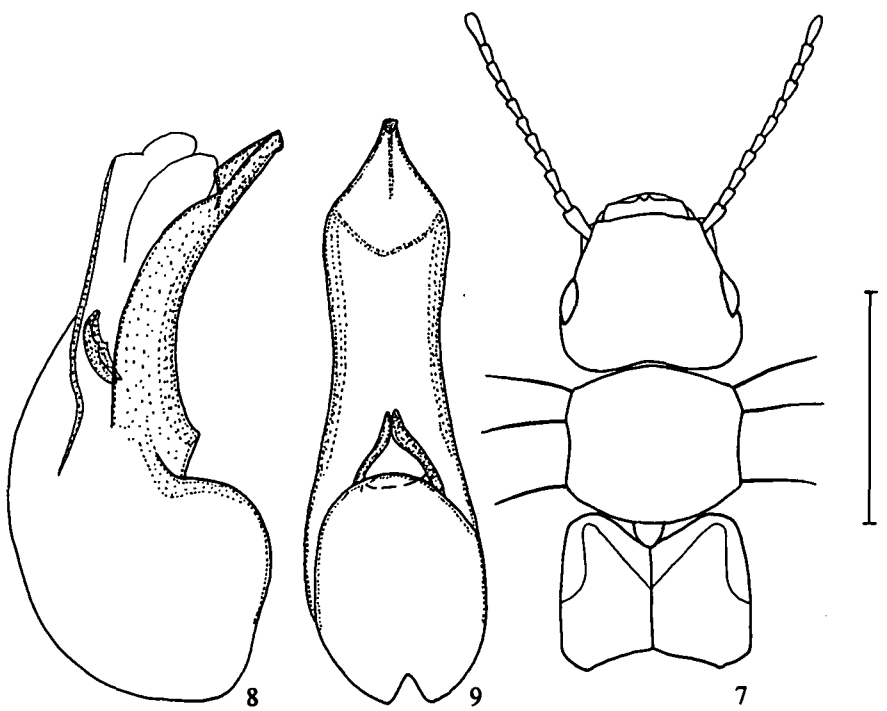
mately twice as wide as punctures and shining; pubescence short, greyish, depressed.

Elytra approximately 1.12 times as wide and at suture 0.62 - 0.66 times as long as pronotum; microsculpture absent; puncturation very distinct and granulose; interstices as wide as punctures or slightly wider; pubescence yellowish, similar to that of head and pronotum; posterior margin of each elytron with approximately 8 long black setae. Hind wings reduced.

Abdomen slightly narrower than elytra, widest at segments V - VI; puncturation of tergites III - VI well-defined, granulose, interstices on average as wide as punctures and shining; puncturation of tergite VII equally distinct, but sparser; posterior margin of tergite VII with strongly reduced, very narrow palisade fringe.

♂: sternite VII unmodified, its posterior margin weakly concave; posterior margin of sternite VIII with deep and acute incision; aedeagus as in Figs. 8-9.

D e r i v a t i o n o m i n i s : The name (Lat., adj.) refers to the distinctive number of setae at the lateral pronotal margins.



Figs. 7-9: *Astenus sexsetosus* sp. n.: **7** – outline of forebody; **8, 9** – aedeagus in lateral and in ventral view. Scale: 7: 1 mm; 8-9: 0.25 mm.

Comparative notes: From all its Anatolian and Caucasian consubgeners, *A. sexsetosus* sp. n. is distinguished by the number of pronotal setae, by the shape of the lateral margins of the pronotum, and by the morphology of the aedeagus. It additionally differs from *A. paphlagonicus* by the more transverse, much less densely punctured and more shining pronotum, as well as by the more extensive yellow coloration of the elytra, from *A. bicoloratus* by the more slender antennae, the more extensive yellow coloration of the elytra, the different puncturation of the abdomen, and the presence of a very narrow rudimentary palisade fringe at the hind margin of tergite VII, and from *A. paradoxus* by the smaller eyes, the denser puncturation of the head, the shorter elytra, and the more strongly reduced palisade fringe at the posterior margin of tergite VII.

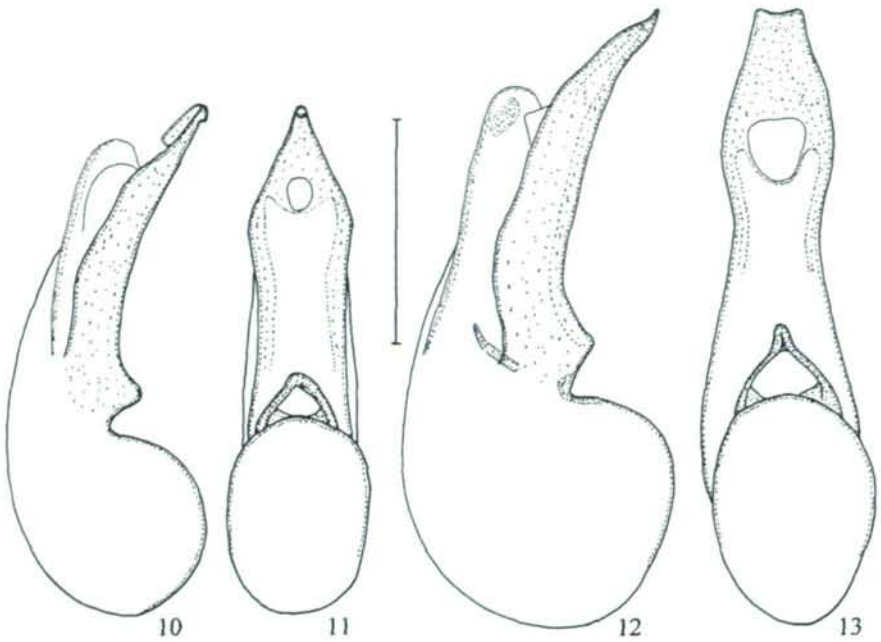
Distribution: The type locality is situated approximately 40 km east of Kayseri, Kayseri province, central Anatolia (Map 1).

Astenus (*Eurysunius*) *paradoxus* (EPPELSHEIM 1877) (Figs. 10-11, Map 1)

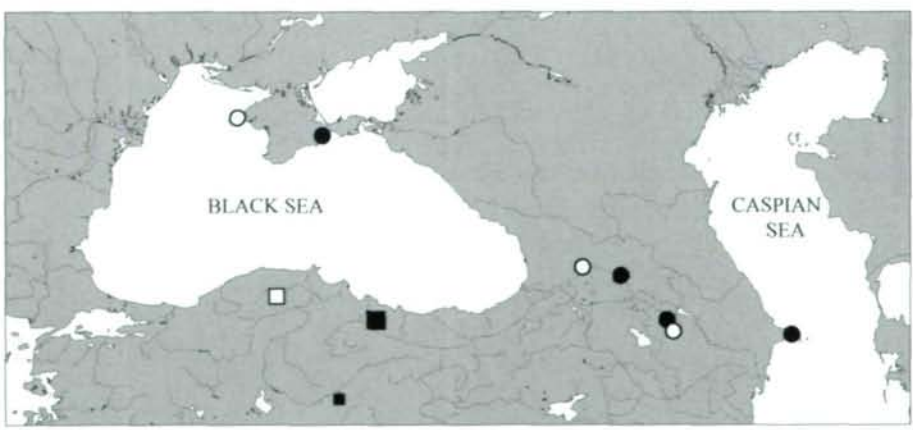
Material examined: **Georgia:** 1♂, Gyandzha (=Kirovabad) ["Elisabetpol"] (NHMW); 1♂, Tbilisi, Mzcheta, 4.-23.VI.1987, leg. Wrase & Schülke (cSch). **Azerbaijan:** 1♀: "Surachani [=Surachany] Faust. / 12 / paradoxus Eppelsh. Schneid. Lder. Beitr. Käferf. d. Caucas. Brünn, 1878. p. 114 / c. Epplsh. Steind. d. / Typus" (NHMW). **Ukraine:** 1♀: "paradoxus mihi, Feodosia, Retowski / c. Epplsh. Steind. d. / Typus" (NHMW).

The original description is based on a single specimen collected "von Leder bei Suram" (Georgia) (EPPELSHEIM 1877). There are two specimens in the Eppelsheim collection, both labelled "Typus", but neither of them is the holotype. Neither the localities nor the collectors indicated on the labels match the original description. The true holotype may be in the collections of the Hungarian Natural History Museum Budapest, where much of Reitter's and Leder's material is deposited.

Based on the records indicated above, as well as on some scattered literature records (COIFFAIT 1984, EPPELSHEIM 1877, GUSAROV 1989), *A. paradoxus* is widespread in the Caucasus region, its distribution ranging from Crimea (Ukraine) in the west to eastern Azerbaijan in the east (Map 1). Its coloration is apparently variable. The elytra are distinctly bicoloured in the specimens from Surachany and Mzcheta, whereas in the remaining specimens they are uniformly ferrugineous. The aedeagus is illustrated in Figs. 10-11.



Figs. 10-13: *Astenus paradoxus* (EPPELSHEIM) **(10-11)**, and *A. breuili* JARRIGE **(12-13)**: **10-12** – aedeagus in lateral and in ventral view. Scale: 0.25 mm.



Map 1: Distribution of *Eurysunius* species in Anatolia and the Caucasus region: *Astenus bicoloratus* sp. n. (large black square), *A. sexsetosus* sp. n. (small black square), *A. paphlagonicus* sp. n. (open square), and *A. paradoxus* (EPPELSHEIM) (filled circles: material examined; open circles: literature records).

Key to the Turkish and Caucasian *Astenus* species of the subgenus *Eurysunius*

1. Antennae and tarsi short, antennomeres V - X approximately as wide as long (Fig. 1); lateral margins of pronotum distinctly sinuate and with one seta at anterior angle; elytra with yellow coloration confined to posterior third (Fig. 1). ♂: aedeagus as in Figs. 2-3. Northern Anatolia: Ordu. ..... ***A. bicoloratus*** sp. n
- Antennae and tarsi longer and more slender, antennomeres V - X approximately twice as long as wide; lateral margins of pronotum not or only very weakly sinuate and with more than one seta; elytra with at least posterior half of elytra yellow (Figs. 4, 7). ♂: aedeagus of different morphology. 2
2. Pronotum approximately as wide as long and with very dense puncturation, interstices reduced to narrow ridges; lateral margins of pronotum weakly convex, almost straight; anterior and posterior angles each with seta, these setae slightly longer than half the length of lateral margin; elytra with yellow coloration confined to posterior half (Fig. 4). ♂: aedeagus as in Figs. 5-6. Northern Anatolia: Kastamonu. ..... ***A. paphlagonicus*** sp. n.
- Pronotum transverse and with sparser puncturation, interstices wider than punctures and shining; lateral margins of pronotum of different shape and with additional seta between anterior angles and middle; posterior angles of pronotum with or without setae; pronotal setae longer; yellow coloration of elytra more extensive. ♂: aedeagus of different morphology. 3
3. Eyes distinctly shorter than temples in dorsal view; lateral margins of pronotum each with 3 long setae; elytra shorter, less than 0.7 times as long as pronotum (Fig. 7); palisade fringe at posterior margin of tergite VII more strongly reduced. ♂: aedeagus as in Figs. 8-9. Central Anatolia: Kayseri..... ***A. sexsetosus*** sp. n.
- Eyes at least as long as temples in dorsal view; lateral margins of pronotum each with 2 long setae, posterior angles without setae; elytra longer, more than 0.7 times as long as pronotum; palisade fringe at posterior margin of tergite VII more developed. ♂ aedeagus as in Figs. 10-11. Caucasus region from Crimea to Azerbaijan. ..... ***A. paradoxus*** (EPPELSHEIM)

Astenus (*Eurysunius*) *breuili* JARRIGE 1952 (Figs. 12-13)

Material examined: 1♂, Spain, Andalucia, Sierra de las Nieves, 36°41'24N, 05°01'19W, 1700m, snow patches, 26.II.2000, leg. Lompe (cAss).

The above specimen was collected at the type locality of *A. baeticus* COIFFAIT 1960, a junior synonym of *A. breuili* JARRIGE. The previously unknown aedeagus is illustrated in Figs. 12-13; it is of similar morphology as that of *A. colasi* COIFFAIT, which, too, was described from Andalucia.

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I am most grateful to G. Cuccodoro (MHNG) and H. Schillhammer (NHMW) for arranging a loan of material under their care, to V. Puthz (Schlitz) for screening thousands of unidentified staphylinid specimens in the collections of the MHNG for material that might fall into the scope of my taxonomic interests, as well as to M. Schülke (Berlin) for the loan of additional material.

Zusammenfassung

Astenus (Eurysunius) bicoloratus sp. n., *A.* (*E.*) *paphlagonicus* sp. n. und *A.* (*E.*) *sexsetosus* sp. n. werden aus dem nördlichen und zentralen Anatolien beschrieben und von dem in der Kaukasusre-

gion verbreiteten *A.* (*E.*) *paradoxus* (EPPELSHEIM) unterschieden. Die Aedoeagi dieser Arten, der bisher unbekannte Aedoeagus von *A.* (*E.*) *breuili* JARRIGE, sowie der Habitus der neu beschriebenen Taxa werden abgebildet. Für die türkischen und kaukasischen *Eurysunius*-Arten werden eine Verbreitungskarte und eine Bestimmungstabelle erstellt.

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